The Role of Construction Cost Consulting Services in Investment and Financing Decisions of Construction Projects

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Abstract: With the development of construction industry, the complexity of project investment and financing decision-making has increased, and the importance of engineering cost consulting service has become prominent. This article focuses on the role of engineering cost consulting service in investment and financing decision-making of construction projects. This article analyzes the theoretical basis of engineering cost consulting service and investment and financing decision-making of construction projects, discusses its functions in various stages of project pre-planning, financing, investment decision-making assessment, and analyzes the factors that affect the service's function, such as industry environment, consulting institutions themselves and the characteristics of construction projects. Although engineering cost consulting service is of great significance in all aspects of investment and financing decision-making of construction projects, it is restricted by many factors. In order to play its role better, it is needed to improve industry supervision and policy support, strengthen the self-construction of consulting institutions and strengthen the cooperation of all participants in the project, so as to enhance the scientific and rational decision-making of investment and financing of construction projects.

1. Introduction

With the vigorous development of the construction industry, the investment and financing decisions of construction projects play a decisive role in the success or failure of the project [1]. With the increasing complexity of the construction market, the scale of the project is expanding, the technical difficulty is gradually improving, and the uncertainty and risks faced by investment and financing decisions are also increasing [2]. In this context, the engineering cost consulting service is more and more important in the investment and financing decision of construction projects because of its professionalism and pertinence.

From a macro perspective, as an important pillar of the national economy, the healthy and stable development of the construction industry is related to the overall situation of the national economy [3]. Reasonable investment and financing decisions can optimize the allocation of resources, improve the efficiency of capital use, and then promote the sustainable development of the construction industry [4]. The engineering cost consulting service provides data support and professional advice for investment and financing decision-making through accurate calculation of project cost and keen grasp of market price.

From the microscopic point of view, for a single construction project, accurate project cost assessment is the cornerstone of investment decision [5]. Investors need to judge the feasibility, expected income and potential risks of the project based on reliable cost information, so as to decide whether to invest and the scale and timing of investment. In the financing link, the project cost consulting service is helpful to determine the reasonable financing amount and structure, reduce the financing cost and ensure the stability of the project capital chain.

However, there are still some problems in the application of engineering cost consulting service in investment and financing decision-making of construction projects. The professional competence of some consulting institutions is uneven, and the service quality is difficult to meet the complex and changeable investment and financing decision-making needs; The industry norms and

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supervision mechanism are not perfect, which affects the effective play of the role of engineering cost consulting services [6]. Based on this, this article studies the role of engineering cost consulting service in investment and financing decision-making of construction projects, analyzes existing problems and explores improvement strategies. This not only helps to improve the scientificity and rationality of investment and financing decisions of construction projects, but also promotes the healthy development of engineering cost consulting industry.

2. Engineering cost consulting service and investment and financing decision of construction projects

The theoretical basis of engineering cost consulting service covers the composition of engineering cost, pricing principles and methods, etc. The project cost consists of the purchase cost of equipment and tools, the construction and installation cost, and other construction costs. Its valuation is based on quota, list specification, etc., and reflects the funds needed for project construction through scientific calculation [7]. This service uses professional knowledge to provide services such as cost prediction and control for the project.

The investment and financing decision theory of construction projects includes investment decision and financing decision. In investment decision-making, NPV, IRR and other methods are used to evaluate the feasibility and benefits of the project, and to consider the risks and returns of the project [8]. Financing decision-making involves determining financing scale and choosing financing methods, such as equity financing and debt financing, in order to optimize financing structure and reduce capital cost.

The two are closely related. Accurate project cost is an important basis for investment and financing decision-making, which provides a basis for investment estimation and financing scale determination [9]. Investment and financing decisions in turn affect the project cost, and different investment strategies and financing structures will change the project implementation conditions, thus affecting the cost control.

3. The function of engineering cost consulting service

3.1 Pre-project planning stage

In the pre-planning stage of construction projects, the core function of engineering cost consulting service is to provide accurate investment estimation. At this stage, the details of the project are not completely clear, but the investment estimation is very important for the project establishment and the determination of the investment direction. Based on professional knowledge and rich experience, engineering cost consulting institutions make a rough calculation of project investment by using analogy estimation, coefficient estimation and other methods according to similar project data, market price information and preliminary project planning scheme. For example, by analyzing the unilateral cost of the same type of construction projects in the past, combined with the characteristics of the current project, such as construction area, structural form and construction standards, a more reliable investment estimate is obtained.

3.2 Project financing stage

In the project financing stage, the project cost consulting service helps to determine the reasonable financing scale and structure. On the one hand, the accurate project cost can clearly reflect the total amount of funds needed for the project and provide reference for the financing scale. According to the project construction progress plan, the consulting organization can calculate the capital demand in stages, clarify the financing amount in each stage, and prevent insufficient financing from affecting the project progress or excessively increasing the capital cost. On the other hand, in the choice of financing structure, engineering cost consulting service can also provide professional support. Consulting institutions will comprehensively consider the project risk, financing cost, repayment ability and other factors, analyze the advantages and disadvantages of different financing methods (such as bank loans, bond issuance, equity financing, etc.), and assist

the project parties to formulate the optimal financing structure. Table 1 lists the differences of common financing methods in cost, risk and control right.

Table 1 Comparison of Different Financing Methods

Financing Method	Cost of Financing	Risk Level	Impact on Control	Financing Speed
Bank Loan	Relatively low, fixed interest	Repayment risk, depends on terms	Usually no impact	Fast
Bond Issuance	Market-driven, fluctuating	Credit risk, interest rate risk	No impact	Slow, requires conditions
Equity Financing	Higher, profit-sharing	Shared among shareholders	Dilutes control	Varies, may be slow

3.3 Project investment decision assessment stage

In the assessment stage of project investment decision-making, engineering cost consulting service provides the key cost basis for decision-making and improves the scientificity of decision-making. By analyzing the whole life cycle cost of the project, including construction cost, operation cost, maintenance cost and demolition cost, the consulting organization presents the real cost status of the project for investors. At the same time, combined with market demand forecast and expected return analysis of the project, the return on investment of the project is evaluated. In addition, the project cost consulting service will also identify and evaluate the possible cost risks of the project, such as material price fluctuations, design changes and other risks, and put forward corresponding countermeasures.

4. Determinants shaping the role of cost consulting in investment decisions

4.1 Industry environmental factors

The standardization of the construction market has a significant impact on the engineering cost consulting service. In a standardized market environment, all parties follow unified rules and standards, and the development of consulting services is more orderly. On the other hand, if the market order is chaotic, malicious competition and illegal operation exist, the engineering cost consulting agency may provide inaccurate cost information to meet the unreasonable needs of customers. For example, in order to obtain business, some consulting institutions have lowered the charging standards, resulting in a decline in service quality, and it is difficult to carry out cost consulting work in detail.

Policies and regulations are the important direction of engineering cost consulting service. The government's construction industry policies and project cost management regulations directly affect the content and methods of consulting services. For example, the adjustment of tax policy will change the cost composition of the project; The strengthening of environmental protection policy may lead to the change of building materials and construction technology, and then affect the project cost. If consulting institutions fail to understand and master the changes of policies and regulations in time, they may provide outdated or inaccurate suggestions in investment and financing decisions.

4.2 The consulting organization's own factors

The quality of engineering cost consulting service largely depends on the quality of professionals. Professionals should not only have solid professional knowledge of project cost, but also be familiar with investment and financing related theories, laws and regulations. As shown in Table 2, professionals should master many knowledge and skills such as engineering measurement and valuation, project economic assessment, finance and financing. However, at present, the professional level of some consulting institutions is uneven, and some personnel lack practical experience or learning ability of new knowledge and technology, so they can't accurately cope with

the complex and changeable investment and financing decision-making needs of construction projects.

Table 2 Knowledge and Skill Requirements for Cost Consulting Professionals

Area of Knowledge	Key Requirements	Proficiency	Acquisition Methods	Application Scenarios
Measurement & Valuation	Master QS rules, cost software	Proficient	Study, practice	Investment estimation, budgeting
Economic Assessment	Use NPV, IRR for feasibility analysis	Expert	Courses, case studies	Investment decision assessment
Finance & Financing	Know financing methods, cost and risk assessment	Proficient	Finance courses, project experience	Financing plan development
Laws & Regulations	Familiar with construction laws and policies	Familiar	Training, self-study	Ensure compliance
Information Technology	Skilled in BIM, cost management software	Proficient	Technical training	Cost analysis and management
Communication & Coordination	Effective communication with stakeholders	Good	Training, project practice	Coordination and collaboration

The service quality and reputation of consulting institutions are the foundation of their foothold in the market. Quality service can provide customers with comprehensive, accurate and timely cost consulting reports, and enhance customers' trust in consulting institutions. And consulting institutions with poor reputation, even if they provide correct cost information, may be difficult to get full recognition from customers because of their bad records in the past. In order to pursue short-term interests, some consulting institutions ignore the quality of service, and the reports issued by them have problems such as incorrect data and incomplete analysis, which seriously affect their role in investment and financing decisions.

4.3 Characteristic factors of construction projects

The complexity of construction projects is different, and the requirements for engineering cost consulting services are also different. Complex projects involve a variety of professional technologies, complex construction techniques and many participants. This makes the cost consultation more difficult. For example, large-scale commercial complex projects not only include conventional building structural engineering, but also involve intelligent systems, fire protection systems, HVAC systems and other professional fields. The systems are interrelated and influence each other. Engineering cost consulting institutions need to have comprehensive analysis ability across disciplines and accurately grasp the composition and changing trend of project cost.

The scale of the project is directly related to the level of project cost and the complexity of investment and financing decision. Large-scale projects have huge investment, extensive sources of funds and more complicated financing structure. At the same time, a large scale means a long construction period, during which there are more uncertain factors, such as market price fluctuations and policy adjustments. Engineering cost consulting institutions need to invest more manpower, material resources and time in tracking and analysis to ensure reliable cost basis in investment and financing decision-making.

5. Conclusions

Engineering cost consulting service provides cost-related services for the project based on the theory of engineering cost composition and pricing principle. The investment and financing decision of construction projects depends on investment decision-making methods and financing structure theory. The two are interrelated, and the project cost provides the basis for investment and financing decisions, which affect the project cost.

In all stages of the project, the project cost consulting service plays a significant role. In the pre-planning stage, accurate investment estimation provides a key reference for project establishment and investment direction; In the financing stage, assist in determining the reasonable financing scale and structure, and ensure that the project funds are stable and the cost is reasonable; In the investment decision-making assessment stage, it provides strong support for scientific decision-making through life cycle cost analysis, income assessment and risk identification.

However, its function is influenced by many factors. In terms of industry environment, changes in market norms and policies and regulations will affect the orderly development and accuracy of consulting services; The quality of professionals, service quality and reputation of consulting institutions determine whether they can provide high-quality consulting services; The characteristics of construction projects, such as complexity and scale, also put forward different requirements and challenges for consulting services.

In order to give full play to the role of engineering cost consulting service in investment and financing decision-making of construction projects, it is needed to improve industry supervision, create a standardized market environment and strengthen policy guidance and support; Consulting institutions need to improve the quality of professionals and pay attention to service quality and reputation building; At the same time, strengthen the cooperation of all participants in the project. Only in this way can we improve the scientificity and rationality of investment and financing decisions of construction projects and promote the healthy and sustainable development of the construction industry.

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